Commonwealth of Kentucky
Division for Air Quality
REVISED
PERMIT APPLICATION SUMMARY FORM
Completed by: Elizabeth KM Carrier

GENERAL INFORMATION:

Name:	Kentucky Solite Corporation
Address:	P.O. Box 39 Brooks, KY 40109
Date application received:	August 7, 2008
SIC/Source description:	3295
Source ID #:	21-029-00002
Source A.I. #:	454
Activity #:	APE20080001
Permit number:	V-05-079 R1

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance	[ ] General permit
[ ] Permit modification	[ ] Conditional major
__Administrative	[x] Title V
x_Minor	[ ] Synthetic minor
__Significant	[x] Operating
[ ] Permit renewal	[ ] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance [ ] Compliance schedule included
[x] Compliance certification signed

APPLICABLE REQUIREMENTS LIST:

[ ] NSR	[ ] NSPS	[x] SIP
[ ] PSD	[ ] NESHAPS	[ ] Other
[ ] Netted out of PSD/NSR	[x] Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[ ] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[x] Certified by responsible official
[x] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)*	Potential (tpy)
PM/PM_{10}	15.6/5.1	470.9/171.3
SO_2	72.7	2787.617
NOx	51.2	947.846
CO	16.3	145.942
VOC	20.9	176.451
Single HAPs (HCl)	N/D	5.054
Source wide HAPs	N/D	8.326

* Actual based on 2004 KYEIS

SOURCE DESCRIPTION:

The facility produces lightweight aggregate products from raw Shale, Clay, Slate, and/or Recycled Process Particulate Matter. Raw material is mined from an onsite quarry or brought onsite via rail or truck. It is introduced into the process through primary crushers and screened for size before being separated and conveyed to raw material storage silos or to the bulk fines storage bin. The bulk fines can either be sold straight to the customer, transferred to the extruder bin where it is stored then mixed with Light Aggregate Kiln Dust (LAKD) recycled matter and sent to the Kilns when needed, or transferred to the quarry as backfill. The Kilns are fired to a temperature in excess of 1800°F then the raw material is added from the silos or extruder. The material is expanded into clinker by pyro-processing whereby the raw material liquefies and its carbonaceous compounds form gas bubbles that bloat and expand the material driving off moisture and VOCs. The clinker is cooled, then crushed and sent to the clinker stockpiles. Finish product is produced to customer specifications through secondary crushing, screening, and specialty product mixing. Finished products are shipped to customers via truck or rail while out-of-spec material is backfilled to the quarry or recycled back into raw material. Emissions from the kilns are controlled primarily through wet scrubbers. Secondary controls are also available through baghouses with optional lime injection. Dust from the baghouses can be recycled into raw material or backfilled to the quarry along with the scrubber sludge. The facility is a major source for sulfur dioxide (SO2), particulate matter (PM_{10}), and nitrogen oxides (NOx).

CURRENT PERMITTING ACTION: MINOR REVISION: – V-05-079R1

Kentucky Solite Corporation submitted a request for a minor modification of their permit V-05-079 that was received by the Division for Air Quality (DAQ) on August 4, 2008, and supplemental information on August 7, 2008. The modification will increase the maximum raw aggregate feed rate for Kiln #3, Emission Unit 03, from 74,540 pounds per hour to 84,540 pounds per hour or 33 tons per to 37 tons per hour respectively. This increase is a twelve percent greater than the currently permitted rated. However, the coal feed rate of 4.27 ton per hour from the last permitting action remains unchanged. The Division has determined that this modification is a minor revision pursuant to 401 KAR 52:020. The projected potential emissions increase of particulate matter (PM & PM10), in twelve consecutive months total are seventeen (17) and twelve (12) tons, which is below the significant emission increase (SEI) as defined in 401 KAR 51:001 and is not a major modification pursuant to 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality. Though the material through put has increased the emission limit in the current permit and the applicable regulation will remain unchanged. In addition, the facility shall perform particulate

matter emissions test on the current feed rate and the increased rate to-demonstrate that the source will meet the allowable rate in the permit.

EMISSION AND OPERATING CAPS DESCRIPTION:

- Emission Unit 02 Kiln 2

Pursuant to 401 KAR 61:020, Section 3(2)(a), particulate emissions for Kiln #2 shall not exceed 22.2 pounds per hour based on a three hour average and 97.2 tons/year. The permittee may assure compliance with the particulate emission standard for Kiln #2 using the equations listed in the permit.

Pursuant to 401 KAR 61:020, Section 3(1)(a), for Kiln #2, the permittee shall not cause, suffer, allow, or permit any continuous emissions into the open air from a control device or stack which is equal to or greater than forty (40) percent opacity based on six-minute averages.

Pursuant to 401 KAR 50:012, Section 1(2), sulfur content of number 2 fuel oil or used oil burned shall not exceed 1.5 percent by weight; and, coal sulfur content received and burned shall not exceed 2.5 lbs/mmBtu gross heat content, shall not exceed 1.9 lbs/mmBtu gross heat content in any three month rolling average, and shall not exceed 1.7 lbs/mmBtu gross heat content in any twelve month rolling average. The permittee may assure compliance with these sulfur content limitations by using approved EPA or ASTM test methods or vendor certified fuel analysis to determine the fuel sulfur content, and by calculating both a three-month rolling average and a twelve-month rolling average from the as- received fuel records and fuel analysis.

Pursuant to 40 CFR 279 and 40 CFR 761.20, On-Specification (On-Spec) Used Oil shall not exceed the allowable levels below:

On-Spec Used Oil Specifications

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	4,000 ppm maximum
Flash Point	100 °F minimum
PCBs	less than 2 ppm

Pursuant to 401 KAR 50: 012, Section 1 (2), and 40 CFR 761.20, Off-Specification (Off-Spec) Used Oil shall not exceed the allowable levels below:

Off-Spec Used Oil Specifications

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	10,000 ppm maximum
Flash Point	100 °F minimum
PCBs	less than 50 ppm

The permittee shall demonstrate compliance with each of the above Used Oil Specifications by using approved EPA or ASTM test methods or a certified used oil analysis pursuant to 40 CFR 279 and 40 CFR 761.20. Used oil containing 1,000 ppm or more total halogens is presumed to be a hazardous waste which may be rebutted by the permittee pursuant to 40 CFR 279.10 (b) (1).

While burning coal, the fuel feed rate for Kiln #2 shall not exceed 1.42 tons per hour and the process weight shall not exceed 24,840 pounds per hour. While burning natural gas, fuel oil, or used oil, the process weight rate shall not exceed 22,000 pounds per hour.

The permittee shall perform at least one performance test on Kiln #2 for particulate emissions during the life of this permit to demonstrate compliance with the particulate standard. The Kiln #2 performance test for particulates shall be conducted while operating the primary control device, wet scrubber (PP2A), unless a variance is requested of and granted by the Division.

The permittee shall perform a qualitative visual observation of the opacity of emissions from the Kiln 2 control device in operation on a daily basis and maintain a log of the observations. If visible emissions are seen, excluding the wet scrubber vapor portion of the plume, the permittee shall initiate an inspection of the unit and if necessary, make repairs or adjustments to the emission control process. At a minimum of once per month, USEPA Reference Method 9 observations shall be performed.

The permittee shall conduct a performance test for particulate and sulfur dioxide emissions when combusting fuel oil or used oil if such usage exceeds 60 days within any consecutive twelve-month period.

- Emission Unit 03 and EU 04

Pursuant to 401 KAR 61:020, Section 3(2)(a), particulate emissions for Kiln #3 shall not exceed 41.9 pounds per hour based on a three hour average and 184.5 tons/year and for Kiln #3 Clinker Cooler shall not exceed 40.0 pounds per hour based on a three hour average. The permittee may assure compliance with the particulate emission standard for Kiln #3 and the Kiln #3 Clinker Cooler using equations listed in the permit.

Pursuant to 401 KAR 61:020, Section 3(1)(a), for both Kiln #3 and the Kiln #3 Clinker Cooler, the permittee shall not cause, suffer, allow, or permit any continuous emissions in to the open air from a control device or stack which is equal to or greater than forty (40) percent opacity based on six-minute averages.

Pursuant to 401 KAR 50:012, Section 1(2), sulfur content of number 2 fuel oil or used oil burned shall not exceed 1.5 percent by weight; and, coal sulfur content received and burned shall not exceed 2.5 lbs/mmBtu gross heat content, shall not exceed 1.9 lbs/mmBtu gross heat content in any three month rolling average, and shall not exceed 1.7 lbs/mmBtu gross heat content in any twelve month rolling average. The permittee may assure compliance with these sulfur content limitations by using approved EPA or ASTM test methods or vendor certified fuel analysis to determine the fuel sulfur content, and by calculating both a three-month rolling average and a twelve-month rolling average from the as- received fuel records and fuel analysis.

Pursuant to 40 CFR 279 and 40 CFR 761.20, On-Specification (On-Spec) Used Oil shall not exceed the allowable levels below:

On-Spec Used Oil Specifications

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	4,000 ppm maximum
Flash Point	100 °F minimum
PCBs	less than 2 ppm

Pursuant to 401 KAR 50: 012, Section 1 (2), and 40 CFR 761.20, Off-Specification (Off-Spec) Used Oil shall not exceed the allowable levels below:

Off-Spec Used Oil Specifications

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	10,000 ppm maximum
Flash Point	100 °F minimum
PCBs	less than 50 ppm

The permittee shall demonstrate compliance with each of the above Used Oil Specifications by using approved EPA or ASTM test methods or a certified used oil analysis pursuant to 40 CFR 279 and 40 CFR 761.20. Used oil containing 1,000 ppm or more total halogens is presumed to be a hazardous waste which may be rebutted by the permittee pursuant to 40 CFR 279.10 (b) (1).

While burning coal, the fuel feed rate of Kiln #3 shall not exceed 4.27 tons per hour and the process weight shall not exceed 84,540 pounds per hour. While burning natural gas, fuel oil, or used oil, the process weight rate shall not exceed 66,000 pounds per hour.

The permittee shall perform at least one performance test on Kiln #3 for particulate emissions during the life of this permit to demonstrate compliance with the particulate standard. The Kiln #3 performance test for particulates shall be conducted while operating the primary control device, wet scrubber (PP1A), unless a variance is requested of and granted by the Division.

The permittee will not be required to conduct a performance test on Kiln #3 clinker cooler for particulate emissions during the life of this permit to demonstrate compliance with the particulate standard. However, the Division may request a performance test be conducted for reasons including, but not limited to multiple reported opacity limitation exceedances.

The permittee shall conduct a performance test for particulate and sulfur dioxide emissions when combusting fuel oil or used oil if such usage exceeds 60 days within any consecutive twelve-month period.

The permittee shall perform a qualitative visual observation of the opacity of emissions from the Kiln 3 control device in operation and Clinker Cooler stack on a daily basis and maintain a log of the observations. If visible emissions are seen, excluding the wet scrubber vapor portion of the plume, the permittee shall initiate an inspection of the unit and if necessary, make repairs or adjustments to the emission control process. At a minimum of once per month, USEPA Reference Method 9 observations shall be performed.

- Emission Points of Equipment associated with Emission Units 02, 05A, 06A, 06C, 08, and 09 Subject to Fugitive Emission Standards:

The total amount of finished material onsite at any one time shall not exceed 332,880 ton.

To preclude applicability of 401 KAR 60:005, incorporating by reference 40 CFR 60, subpart Y Standards of Performance for Coal Preparation Plants commencing construction or modification after October 24, 1974, each affected facility processing coal shall not process more than 200 tons of coal each day.

The materials processed at each affected facility listed in the permit under this subsection shall be controlled with wet suppression, enclosures, and/or dust collection equipment so as to comply with the requirements specified in 401 KAR 63:010, Section 3, Standards for Fugitive Emissions. However, 40 CFR 279.12 (b) prohibits the use of Used Oil as a dust suppressant.

Pursuant to 401 KAR 63:010, Section 3 (1), no person shall cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished, or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, when applicable, but not be limited to the list found in the permit.

For the purpose of demonstrating continuous compliance, pursuant to 401 KAR 50:055, General Compliance Requirements, Section 2(5), all air pollution control equipment and all pollution control measures proposed by the application in response to which this permit is issued shall be in place, properly maintained, and in operation in accordance with the manufacturer's specifications and/or standard operating procedures at any time an affected facility for which the equipment and measures are designed is operated, except as provided by 401 KAR 50:055, Section 1. The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the emission points are in operation but the associated control equipment is not.

Visual observations shall be made during each shift, and when any change in method of operation or material occurs, of all operations and control equipment to ensure the control equipment is functioning while the associated equipment is in operation and to determine if any fugitive air emissions are being generated in such a manner as to cause a nuisance or to cross the property line. In addition, visual observations shall be made daily during plant operation to determine if fugitive dust is becoming airborne from the haul road, yard area, or storage areas as the result of vehicular traffic or windy conditions. If such conditions develop, water or a chemical wetting agent shall be applied to these areas as specified in 401 KAR 63:010.

- Emission Points of Equipment associated with Emission Units 05B and 06B Subject to New Source Performance Standards:

For emission points FS2, MS1, MS2, MB1, MB2, MB3, MB 4, MB5, MB6, MB7, PS5, PB8, PB9, PB10, SC1, RS4, and PE1, pursuant to 401 KAR 60:670, incorporating by reference 40 CFR 60.672 (b), no owner or operator shall cause to be discharged into the atmosphere any fugitive emissions which exhibit greater than ten (10) percent opacity.

For emission points FU1, FU2, and FU3, pursuant to 401 KAR 60:670 Section 3(1)(b), where US EPA Reference Method 9 can not be applied for an affected facility enclosed inside a building, and pursuant to 401 KAR 60:670 Section 3(2)(c), where that same building encloses a crusher (FC1 or FC2), the discharge of fugitive emissions shall not exceed fifteen (15) percent opacity.

For emission points MC1, and FC3, pursuant to 401 KAR 60:670, incorporating by reference 40 CFR 60.672 (c), no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, any fugitive emissions which exhibit greater than fifteen (15) percent opacity.

For emission point PS4, pursuant to 401 KAR 60:670, incorporating by reference 40 CFR 60.672 (f), no owner or operator shall cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than seven (7) percent opacity.

For the purpose of demonstrating continuous compliance, qualitative observations are required during each shift, and when any change in method of operation or material occurs, of all operations and control equipment to ensure the control equipment is functioning while the associated equipment is in operation and to determine if any air emissions are visible from the equipment or the controls.

The qualitative observations will be done at a processing rate of the equipment that would preclude circumvention of the intent of this requirement. If visible emissions are seen coming from any emission point or any enclosure housing listed within this subsection, the permittee shall initiate an inspection of the emission unit and if necessary, make repairs or adjustments to the emission controls. At a minimum of once per calendar quarter, USEPA Reference Method 9 and Method 22 observations shall be performed as outlined in the permit.

- Emission Unit 07 Lime Storage Silo and Lime Handling
  Emission Unit 11 (PS1) Light Aggregate Kiln Dust (LAKD) Storage Silo
  Emission Unit 12 (FP1) LAKD Filter Receiver

The operating rates for the LAKD processes including Emission Unit 11 (PS1) and Emission Unit 12 (FP1) shall not exceed 15,000 lbs/hour each.

Pursuant to 401 KAR 59:010 Section 3 (2), particulate emissions from Emission Unit 11 (PS1) and Emission Unit 12 (FP1) shall not exceed 12.5 lbs/hour each based on a three-hour average and 54.8 tons/year each, and particulate emissions from Emission Unit 7 (PS2) shall not exceed 26.4 lbs/hour on a three hour average and 115.7 tons/year. The permittee may assure compliance with the particulate emission standard by using the equations listed in the permit.

For Emission Units 11 (PS1), 12 (FP1), and 7 (PS2), pursuant to 401 KAR 59:010, Section 3(1)(a), the permittee shall not cause, suffer, allow, or permit any continuous emissions in to the open air from a control device or stack associated with any affected facility which is equal to or greater than twenty (20) percent opacity based on six-minute averages.

The permittee will not be required to conduct performance tests for particulate emissions for each of these emission units during the life of this permit to demonstrate compliance with the particulate standard. However, the Division may request a performance test be conducted for reasons including, but not limited to multiple reported opacity standard exceedances.

While each unit is in operation, the permittee shall monitor the amount of LAKD and Lime processed on an hourly basis. The permittee shall perform a qualitative visual observation of the opacity of emissions for each emission unit on a daily basis when operating and maintain a log of the observations. At a minimum of once per calendar quarter when an emission unit operated, USEPA Reference method 9 observations shall be performed.

OPERATIONAL FLEXIBILITY:

The permittee may operate Kiln 2 and Kiln 3, under normal conditions, using any of the alternative control devices listed in the permit with no allowance for variance from all of the emission limitations contained therein. Furthermore, the permittee shall not use the same control device to control emissions while simultaneously operating Kiln 2 and Kiln 3 except during a unit malfunction, and then, only long enough to safely shutdown the malfunctioning unit or safely startup an alternative control device.

The permittee may operate each or all of the mobile equipment to process raw material, finished product, or coal, as specifically listed in the permit, under normal conditions, and with no allowance for variance from all the emission limitations contained within this permit. For each operating scenario listing a piece of mobile equipment, the permittee shall comply with emission limitations specified for each emission unit while to the extent practical, maintain and operate any affected facility, including employing appropriate control measures, in a manner consistent with good air pollution control practice for minimizing emissions.

Pursuant to 401 KAR 50:020 Section 18, the permittee shall notify the Division in writing when any mobile equipment is permanently removed from the plant site or new mobile equipment is added to the plant site at least seven (7) business days prior to the change.